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WATER SUPPLY OUTLOOK FOR WASHINGTON

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PROCUREMENT SECTION
CURRENT SERIAL RECORDS

Prepared by

U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

DEPARTMENT OF ECOLOGY STATE OF WASHINGTON

Data included in this report were obtained by the agencies named above in cooperation with the U.S. Forest Service, U.S. Geological Survey, National Park Service, and other Federal, State and Private organizations.

AS OF
APR. 1, 1971

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters of key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	12417 Federal Building, Denver, Colorado 80202
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 970, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84111
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82601

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK FOR WASHINGTON

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

KENNETH E. GRANT
ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON, D.C.

|||||

Released by

ORLO W. KRAUTER
STATE CONSERVATIONIST
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SPOKANE, WASHINGTON

In Cooperation with

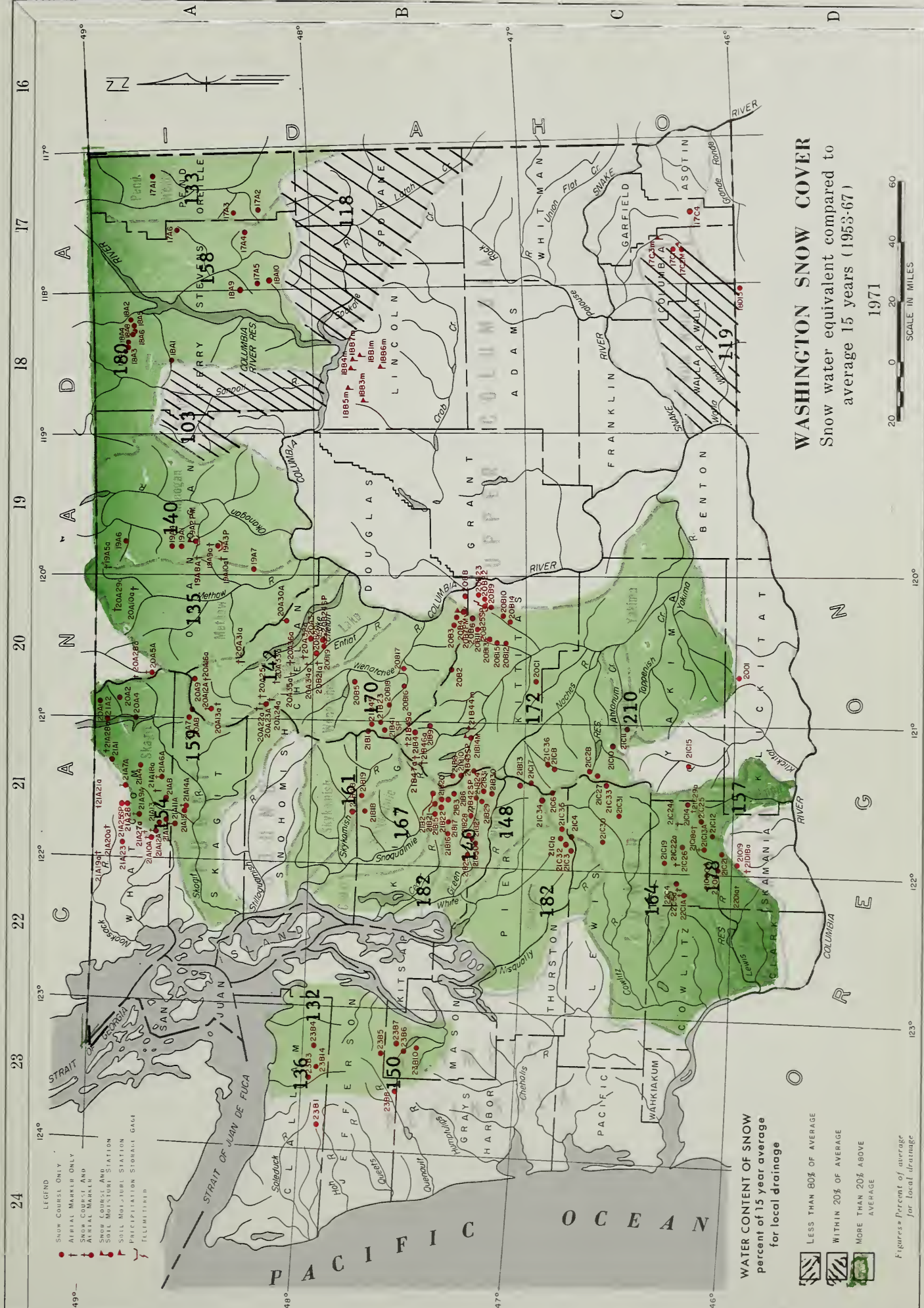
JOHN A. BIGGS
DIRECTOR
DEPARTMENT OF ECOLOGY
STATE OF WASHINGTON

|||||

Report prepared by

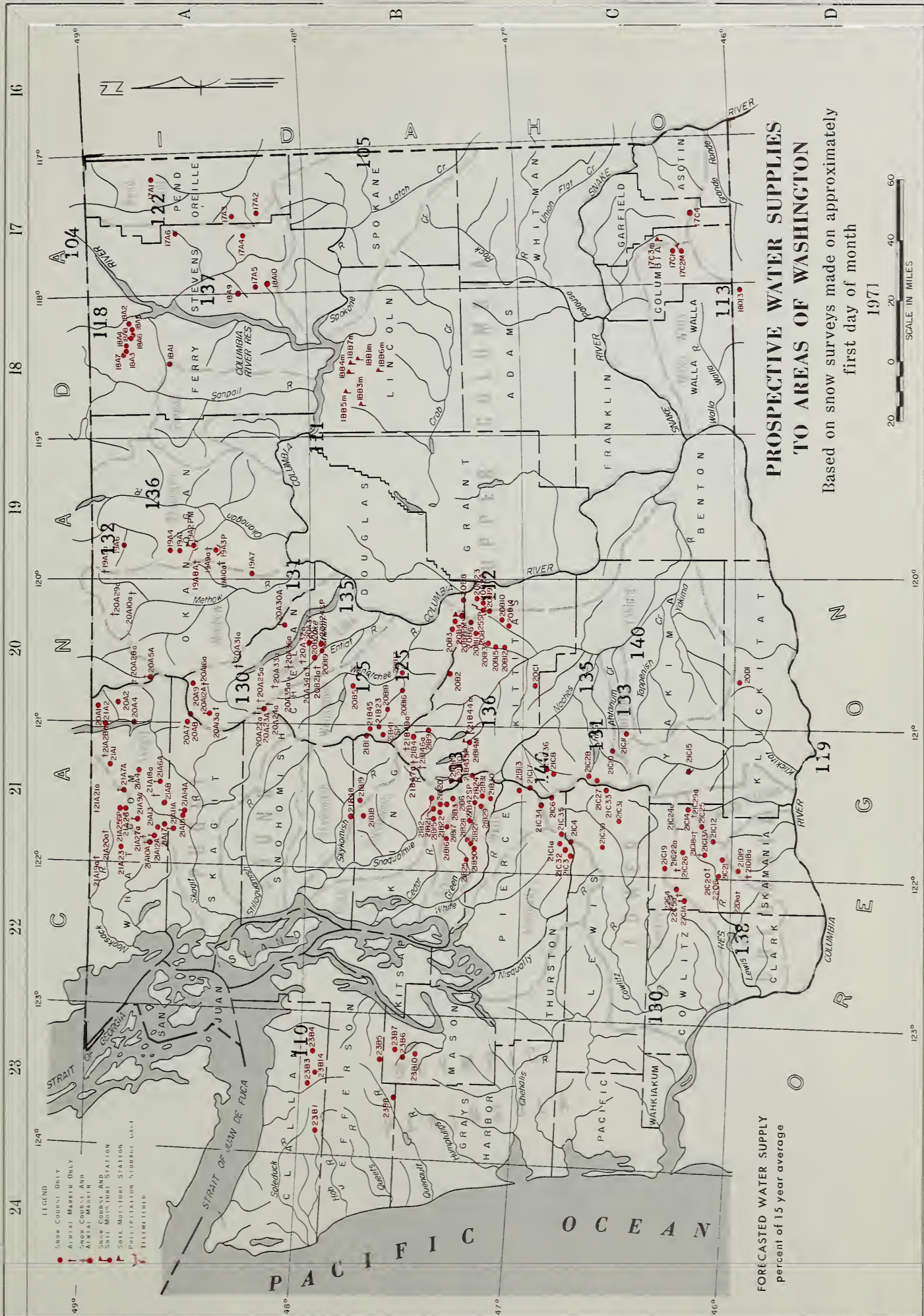
ROBERT T. DAVIS, Snow Survey Supervisor

SOIL CONSERVATION SERVICE
360 U.S. COURTHOUSE
SPOKANE, WASHINGTON 99201



INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.																							
UPPER COLUMBIA DRAINAGE																																								
Pend Oreille River																																								
Boyer Mountain	17A2	7	31N	43E	5250	Colockum Creek	20B22	11	20N	20E	5300	Divide Meadow	21C29a	21	9N	10E	5600																							
Bunchgrass Meadow	17A1	24	37N	44E	5000	Colockum Creek #2	20B23	1	20N	20E	4300	Grand Meadow	21C25	28	8N	9E	3500																							
Winchester Creek	17A3	30	33N	43E	2970	Squillchuck Creek	20B3	12	21N	19E	4400	Lone Pine Shelter	21C26	8	9N	7E	3800																							
Kettle River																																								
Boulder Road	18A2	36	39N	36E	1450	Scout-A-Vista	20B4	18	21N	20E	3400	Marble Mountain	22C5a	24	8N	5E	3200																							
Rutte Creek	18A3	28	39N	35E	4070	Stemilt Creek												Devils Park	20A4	14	40N	14E	3500																	
Cabin Creek	18A8	5	38N	36E	3170	Jump-Off	20B8	34	21N	20E	4450	Oldman Pass	21D19	22	6N	7E	3100																							
Goat Creek	18A5	26	39N	35E	3595	Stemilt Slide	20B6	30	21N	20E	5000	Plains of Abraham	22C1a	35	9N	5E	4400																							
Snow Caps Creek	18A5	3	38N	36E	2150	Upper Wheeler	20B7PM	30	21N	20E	4400	Smith Creek Road	22C4	29	9N	6E	2100																							
Snow Caps Trail	18A6	5	38N	36E	2720	Crab Creek												Spencer Meadow	21C20a	16	8N	7E	3400																	
Summit G. S.	18A7	20	39N	35E	4600	Creston-Kunz	18B1m	32	27N	34E	2440	Surprise Lakes	21C13a	14	7N	8E	4250																							
Colville River																		Table Mountain	21C24a	20	9N	9E	4200																	
Baird	17A6	19	36N	42E	3215	Jack Woods	18B3m	28	27N	31E	2750	Timbered Peak	21D18a	36	6N	6E	3000																							
Carlson	18A9	34	32N	38E	2885	Krause	18B4m	21	27N	33E	2420	Cowlitz River																												
Chewelah	17A4	11	32N	41E	4925	Sheffels	18B5m	17	27N	32E	2378	21C6	15	16N	10E	5300																								
Stranger Mountain	17A5	26	31N	38E	4990	Sherman	18B7m	24	27N	32E	2440	Mosquito Meadows	21C19	33	10N	7E	4100																							
Togo	18A10	6	29N	38E	3370	Wheatridge	18B6m	24	25N	32E	2290	Onanapocosh	21C32	28	15N	10E	2200																							
Sanpoil River																		Packwood Lake	21C31	21	13N	10E	2870																	
Sherman Creek Pass	18A1	19	36N	35E	5350	Yokimo River												Pitgail Peak	21C33	11	13N	11E	4500																	
Okanogan River																		Ahtanum R. S.	21C11	26	12N	14E	3100																	
Clark	19A8a	2	36N	23E	7000	Big Boulder Creek	21B9	35	23N	14E	3200	Potato Hill	21C14	36	10N	10E	4500																							
Muckamuck	19A9a	20	36N	24E	6750	Bumping Lake	21C8	23	16N	12E	3450	Willamie Creek	21C30	3	13N	8E	3250																							
Nutton Creek No. 1	19A1	30	37N	24E	5700	Bumping Lake New	21C36	13	16N	12E	3400	Nisqually River																												
Nutton Creek No. 2	19A4	19	37N	24E	6000	Colockum Pass	20B9	25	20N	20E	5370	21C4	23	15N	8E	4550																								
Pasayten	20A28a	32	40N	18E	4300	Cooke Creek	20B10	17	19N	20E	4123	21C3	29	15N	8E	2760																								
Rusty Creek	19A3P	18	35N	24E	4000	Donery Flat	21B44m	15	20N	14E	2200	21C1	13	15N	8E	5050																								
Salmon Meadows	19A2PM	33	37N	24E	4500	Fish Lake	21B4	34	24N	14E	3371	White River																												
Starvation Mtn.	19A10a	15	35N	23E	6750	Green Lake	21C10	3	12N	13E	6000	21B13	30	18N	11E	6000																								
Touts Coulee	19A6	30	39N	25E	2845	Grouse Camp	20B11	29	21N	19E	5385	21C34	4	16N	9E																									
Methow River																		Corral Pass	21B13	30	18N	11E	6000																	
Billy Goat Pass	20A10a	10	38N	20E	6400	High Creek	20B12	34	20N	19E	2930	White River Campground	21C34	4	16N	9E																								
Dollar Watch	20A29a	8	39N	20E	7000	Joe Lake	21B46a	25	23N	12E	4624	Green River																												
Harts Pass	20A5a	7	37N	18E	6500	Lake Cle Elum	21B47a	7	23N	13E	3327	21B24	18	20N	11E	1800																								
Horseshoe Basin	19A5a	15	40N	23E	7000	Lemah Creek	20B47a	15	20N	14E	2200	21B25	27	21N	8E	1200																								
Loup Loop	19A7	36	34N	23E	4650	Manastash	20C1	24	17N	16E	3935	21B42SP	21	21N	9E	3200																								
Chelon Lake Bosin																		Cougar Mountain	21B27	14	20N	8E	2900																	
Cloudy Pass	20A22a	12	31N	15E	6500	Morse Lake	21C17	6	16N	11E	5400	Grass Mountain No. 2	21B27	14	20N	8E	2900																							
Greenwood Flat	20A25a	3	31N	16E	5500	Nanum	20B13	4	20N	19E	3875	Grass Mountain No. 3	21B28	12	20N	8E	2100																							
Little Meadows	20A24a	8	31N	16E	5275	Trail Creek	20B14	20	19N	20E	3360	Lester Creek	21B29	36	20N	10E	3100																							
Lyman Lake	20A23a	18	31N	16E	5900	Tunnel Avenue	21B8	13	21N	11E	2450	Lynn Lake	21B50	21	20N	8E	4000																							
Park Creek Flat	20A13a	18	34N	16E	2220	Walters Flat	20B15	22	20N	19E	3360	Sawmill Ridge	21B31	5	19N	11E	4700																							
Park Creek Ridge	20A12a	7	34N	16E	4600	Waputs Lake	21B49a	12	23N	13E	3024	Snowshoe Butte	21B43SP	14	20N	11E	5000																							
Petersons	20A16a	3	34N	17E	3730	White Pass (East Side)	21C28	2	13N	11E	4500	Stampede Pass	21B10	25	21N	11E	3000																							
Rainy Pass	20A9	21	35N	17E	4780	White Pass (Leach Lake)	21C27	1	13N	11E	4500	Twin Camp	21B30	18	19N	11E	4100																							
Safety Harbor	20A30a	32	31N	20E	6300	LOWER COLUMBIA DRAINAGE												Black and White	23B7	17	24N	5W	4200																	
Nar Creek Pass	20A31a	34	33N	18E	6500	Asotin Creek												Black and White Lakes	23B6	16	24N	5W	4700																	
Entiat River																		Spruce Springs	17C4	9	8N	42E	5700	Four Stream	23B10	1	23N	5W	3000											
Brief	20B19	34	28N	19E	1600	Mill Creek												Home Sweet Home	23B5	28	25N	5W	5200																	
Entiat Meadows	20A33a	28	31N	17E	4800	Couse	17C3m	2	9N	35E	3370	Sundown Pass	23B8	25	24N	7W	3900																							
Entiat River Trail	20A34a	2	29N	17E	3150	Homestead	17C1	11	9N	40E	4030	Cedar River							Deer Lake	23B1	14	28N	9W	3900																
Fox Camp	20A36a	17	30N	18E	6510	Martin Springs (Helmets SW)	17C2M	23	9N	40E	4400	21B3	10	21N	10E	2390	Soleduck River																							
Pope Ridge	20B20	22	29N	18E	4300	Walla Walla Diversions	18D13	22	6N	38E	2400	21B21	30	22N	10E	3300	Snoqualmie River																							
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	4300	Klickitat River												21B22	31	22N	10E	2500	Skokomish River																	
Pugh Ridge	20A32a	34	30N	18E	6400	Satus Pass	20D1	21	6N	17E	4030	City Cabin	21B3	10	21N	10E	2390	Black and White																						
Shady Pass	20A37	20	29N	19E	6200	West Fork Cabin	21C15	23	9N	12E	3000	Mt. Gardner Aux.	21B21	30	22N	10E	3300	Black and White Lakes																						
Snow Brushy	20A35a	21	30N	17E	3850	Cultus Creek	21C12	35	7N	8E	4000	Mt. Lindsay	21B16	31	22N	9E	2500	Four Stream																						
Tommy Creek	20B21a	10	28N	18E	5300	Lewis River												Mt. Washington	21B15	8	22N	9E	3000	Home Sweet Home																
Wenatchee River																		Blue Lake	21C22a	19	9N	8E	4800	Rex River	21B17	11	21N	9E	2400	Sundown Pass										
Berne-Mill Creek	21B23	7	26N	15E	2925	Bob's Trail	21C21	25	8N	7E	2200	South Fork Cedar	21B17	11	21N	9E	2400	Deer Lake																						
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240	Calamity Ridge	22D1a	8	5N	5E	2500	Tinkham Creek	21B20	1	21N	10E	3400	Soleduck River																						
Blewett Pass No. 2	20B2	35	22N	17E	4270	Council Pass	21C18a	24	9N	9E	4200	Snoqualmie River							21B48	31	27N	9E	3500	Skokomish River																
Chiwaukun G. S.	20B16	4	25N	17E	1810	Lewis River												21B2	26	22N	11E	3625	Lake Elizabeth																	
Lake Wenatchee	20B5	33	27N	17E	1970	Blue Lake	21C22a	19	9N	8E	4800	Alpine Meadow	21B48	31	27N	9E	3500	21B19							33	26N	10E	2900												
Leavenworth R. S.	20B17	4	24N	17E	1127	Bob's Trail	21C21	25	8N	7E	2200	Olallie Meadows	21B2	26	22N	11E	3625	21B18							26	22N	9E	1900												
Merritt	20B18	14	26N	16E	2140	Calamity Ridge	22D1a	8	5N	5E	2500	South Fork Tolt	21B2	26	22N	11E	3625	21B18							26	22N	9E	1900												
Stevens Pass	21B1	14	26N	13E	4070	Council Pass	21C18a	24	9N	9E	4200	Lake Elizabeth	21B19	33	26N	10E	2900	21B18							26	22N	9E	1900												
Stevens Pass Sand Shed	21B45	12	26N	19E	3700	LEGEND												Skykomish River																						
Trough #2	20B25SP	10	20N	20E	5310	NUMBERING SYSTEM EXAMPLE												21B19							33	26N	10E	2900												
OLYMPIC PENINSULA																		21A7 SNOW COURSE ONLY												21B19							33	26N	10E	2900
Dungeness River																		21A7 SNOW COURSE AND SOIL MOISTURE STATION												21B19							33	26N	10E	2900
Morice Creek																		21A7 SNOW COURSE AND PRECIPITATION STORAGE GAGE												21B19							33	26N	10E	2900
Cox Valley																		21A7 SNOW COURSE AND PRECIPITATION STORAGE GAGE												21B19							33	26N	10E	2900
Elwha River																		21A7 SNOW COURSE AND PRECIPITATION STORAGE GAGE												21B19							33	26N	10E	2900
Hurricane																		21A7 SNOW COURSE AND PRECIPITATION STORAGE GAGE												21B19							33	26N	10E	2900
Skokomish River																		21A7 SNOW COURSE AND PRECIPITATION STORAGE GAGE												21B19							33	26N	10E	2900
Black and White																		21A7 SNOW COURSE AND PRECIPITATION STORAGE GAGE												21B19							33	26N	10E	2900
Black and White Lakes																		21A7 SNOW COURSE AND PRECIPITATION STORAGE GAGE												21B19							33	26N	10E	2900
Four Stream																		21A7 SNOW COURSE AND PRECIPITATION STORAGE GAGE												21B19							33	26N	10E	2900
Home Sweet Home																		21A7 SNOW COURSE AND PRECIPITATION STORAGE GAGE												21B19							33	26N	10E	2900
Sundown Pass																		21A7 SNOW COURSE AND PRECIPITATION STORAGE GAGE												21B19							33	26N	10E	2900
Deer Lake																		21A7 SNOW COURSE AND PRECIPITATION STORAGE GAGE												21B19							33	26N	10E	2900
Soleduck River																		21A7 SNOW COURSE AND PRECIPITATION STORAGE GAGE												21B19							33	26N	10E	2900
23B1																		21A7 SNOW COURSE AND PRECIPITATION STORAGE GAGE												21B19							33	26N	10E	2900
23B1																		21A7 SNOW COURSE AND PRECIPITATION STORAGE GAGE												21B19							33	26N	10E	2900
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23B1																		21A7 SNOW COURSE AND PRECIPITATION STORAGE GAGE												21B19							33	26N	10E	2900
23B1																		21A7 SNOW COURSE AND PRECIPITATION STORAGE GAGE												21B19							33	26N	10E	2900
23B1																		21A7 SNOW COURSE AND PRECIPITATION STORAGE GAGE												21B19							33	26N	10E	2900
23B1																		21A7 SNOW COURSE AND PRECIPITATION STORAGE GAGE												21B19							33	26N	10E	2900</



INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
UPPER COLUMBIA DRAINAGE					
Pend Oreille River					
Boyer Mountain	17A2	7	31N	131	5250
Bunchgrass Meadow	17A1	24	37N	44E	5000
Winchester Creek	17A3	30	33N	43E	2970
Kettle River					
Boulder Road	18A2	36	39N	36E	1450
Butte Creek	18A3	28	39N	35E	4070
Cabin Creek	18A8	5	38N	36E	3170
Goat Creek	18A4	26	39N	35E	3595
Snow Caps Creek	18A5	5	38N	36E	2150
Snow Caps Trail	18A6	5	38N	36E	2720
Summit G. S.	18A7	20	39N	35E	4600
Colville River					
Baird	17A6	19	36N	42E	3215
Carlson	18A9	34	32N	38E	2885
Chewelah	17A1	11	32N	41E	4925
Stranger Mountain	17A5	26	31N	38E	4990
Togo	18A10	6	29N	38E	3370
Sonpoil River					
Sherman Creek Pass	18A1	19	36N	35E	5350
Okonogon River					
Clark	19A8a	2	36N	23E	7000
Mucknuck	19A9a	20	36N	24E	6750
Nutton Creek No. 1	19A1	30	37N	24E	5700
Nutton Creek No. 2	19A4	19	37N	24E	6000
Paystaven	20A28a	32	40N	18E	4300
Rusty Creek	19A3P	18	35N	24E	4000
Salmon Meadows	19A2PM	33	37N	24E	4500
Starvation Mtn.	19A10a	15	35N	23E	6750
Touts Coulee	19A6	30	39N	27E	2845
Methow River					
Billy Goat Pass	20A10a	10	38N	20E	6400
Dollar Hatch	20A29a	8	39N	20E	7000
Harts Pass	20A5A	7	37N	18E	6500
Horseshoe Basin	19A5a	15	40N	23E	7000
Loup Loop	19A7	36	34N	23E	4650
Chelon Lake Bosin					
Cloudy Pass	20A22a	12	31N	15E	6500
Greenwood Flat	20A25a	3	31N	16E	3540
Little Meadows	20A24a	8	31N	16E	5275
Lyman Lake	20A23a	18	31N	16E	5900
Park Creek Flat	20A13a	18	34N	16E	2220
Park Creek Ridge	20A12a	7	34N	16E	4600
Petersons	20A16a	3	34N	17E	3730
Rainy Pass	20A9	21	35N	17E	4780
Safety Harbor	20A30a	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500
Enfrot River					
Brief	20B19	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4800
Entiat River Trail	20A31a	2	29N	17E	3150
Fox Camp	20A36a	17	30N	18E	6510
Pope Ridge	20B20	22	29N	18E	4300
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	4300
Pugh Ridge	20A32a	34	30N	18E	6400
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3850
Tommy Creek	20B21a	10	28N	18E	5300
Wenotchee River					
Berne-Mill Creek	21B23	7	26N	15E	2925
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240
Blewett Pass No. 2	20B2	35	28N	17E	4270
Chiwaukum G. S.	20B16	4	25N	17E	1810
Lake Wenatchee	20B5	33	27N	17E	1970
Leavenworth R. S.	20B17	1	24N	17E	1127
Neritt	20B18	4	26N	16E	2140
Stevens Pass	21B1	14	26N	13E	4070
Stevens Pass Sand Shed	21B45	12	26N	19E	3700
Trough #2	20B25SP	10	20N	20E	5310

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Clockum Creek					
Clockum Creek	20B22	11	20N	20E	5300
Clockum Creek #2	20B23	1	20N	20E	4300
Squilchuck Creek					
Beehive Springs	20B3	12	21N	19E	4400
Scout-A-Vista	20B4	18	21N	20E	3400
Stemilt Creek					
Jump-Off	20B8	34	21N	20E	4450
Stemilt Slide	20B6	30	21N	20E	5000
Upper Wheeler	20B7PM	30	21N	20E	4400
Crob Creek					
Creston-Kunz	18B4m	32	27N	34E	2440
Jack Woods	18B3m	28	27N	31E	2750
Shaeffels	18B4m	21	27N	33E	2420
Sherman	18B5m	17	27N	32E	2378
Wheatridge	18B7m	24	27N	33E	2440
	18B6m	24	25N	32E	2290
Yokimo River					
Ahtanum R. S.	21C11	26	12N	14E	3100
Big Boulder Creek	21B9	35	23N	14E	3200
Bumping Lake	21C8	23	16N	12E	3450
Bumping Lake New	21C36	13	16N	12E	3400
Clockum Pass	20B9	25	20N	20E	5370
Cooke Creek	20B10	17	19N	20E	4123
Domery Flat	21B44m	15	20N	14E	2200
Fish Lake	21B4	34	24N	14E	3371
Green Lake	21C10	3	12N	13E	6000
Grouse Camp	20B11	29	21N	19E	5385
High Creek	20B12	34	20N	19E	2930
Joe Lake	21B46a	22	23N	12E	4624
Lake Cle Elum	21B14M	15	20N	14E	2200
Lemah Creek	21B47a	7	23N	13E	3327
Manastash	20C1	24	17N	16E	3935
Morse Lake	21C17	6	16N	11E	5400
Nanum	20B13	4	20N	19E	3675
Trail Creek	20B14	20	19N	20E	3360
Tunnel Avenue	21B8	13	21N	11E	2450
Walters Flat	20B15	22	20N	19E	3360
Wapatus Lake	21B49a	12	23N	13E	3024
White Pass (East Side)	21C28	2	13N	11E	4500
White Pass (Leach Lake)	21C27	1	13N	11E	4500
LOWER COLUMBIA DRAINAGE					
Asotin Creek					
Spruce Springs	17C4	9	8N	42E	5700
Mill Creek					
Couse	17C3m	2	9N	35E	3370
Homestead	17C1	11	9N	40E	4030
Martin Springs (Helmers SW)	17C2M	23	9N	40E	4400
Walla Walla Diversion	18D13	22	6N	38E	2400
Klickitat River					
Satus Pass	20D1	21	6N	17E	4030
West Fork Cabin	21C15	23	9N	12E	3000
White Solmon River					
Cultus Creek	21C12	35	7N	8E	4000
Lewis River					
Blue Lake	21C22a	19	9N	8E	4800
Bob's Trail	21C21	25	8N	7E	2200
Calamity Ridge	22D1a	8	5N	5E	2500
Council Pass	21C18a	24	9N	9E	4200

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Lewis River (continued)					
Divide Meadow	21C29a	21	9N	10E	5600
Grand Meadow	21C25	28	8N	9E	3500
Lone Pine Shelter	21C26	8	9N	7E	3800
Marble Mountain	22C5a	24	8N	5E	3200
New Muddy River	22C6	36	8N	6E	2000
Oldman Pass	21D19	22	6N	7E	3100
Plains of Abraham	22C1a	35	9N	5E	4400
Smith Creek Road	22C4	29	9N	6E	2100
Spencer Meadow	21C20a	16	8N	7E	3400
Surprise Lakes	21C13a	14	7N	8E	4250
Table Mountain	21C24a	20	9N	9E	4200
Timbered Peak	21D18a	36	6N	6E	3000
Cowliiz River					
Cayuse Pass	21C6	15	16N	10E	5300
Mosquito Meadows	21C19	33	10N	7E	4100
Ohanapocosh	21C32	28	15N	10E	2200
Packwood Lake	21C31	21	13N	10E	2870
Pigtail Peak	21C33	11	13N	11E	5900
Potato Hill	21C14	36	10N	10E	4500
Willame Creek	21C30	3	13N	8E	3250
PUGET SOUND DRAINAGE					
Nisqually River					
Ghost Forest	21C4	23	15N	8E	4550
Longmire	21C3	29	15N	8E	2760
Paradise Park (New)	21C35	13	15N	8E	2760
Stem Glade	21C1	13	15N	8E	5050
White River					
Corral Pass	21B13	30	18N	11E	6000
White River Campground	21C34	4	16N	9E	4500
Green River					
Airstrip	21B24	18	20N	11E	1800
Charley Creek	21B25	27	21N	8E	1200
Cougar Mountain	21B42SP	21	21N	9E	3200
Grass Mountain No. 2	21B27	14	20N	8E	2900
Grass Mountain No. 3	21B28	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Lynn Lake	21B50	21	20N	8E	4000
Lynn Ridge	21B31	5	19N	11E	4700
Snowshoe Butte	21B43SP	14	20N	11E	5000
Stempe Pass	21B40	25	21N	11E	3000
Twin Camp	21B30	18	19N	11E	4100
Cedar River					
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21B21	30	22N	10E	3300
Mt. Gardner Aux.	21B22	31	22N	10E	2500
Mt. Lindsay	21B16	31	22N	9E	2500
Mt. Washington	21B15	8	22N	9E	3000
Rex River	21B17	11	21N	9E	2400
South Fork Cedar	21B6	24	21N	10E	3000
Tinkham Creek	21B20	1	21N	10E	3400
Snoqualmie River					
Alpine Meadow	21B48	31	27N	9E	3500
Ollalie Meadows	21B2	19	22N	11E	3625
South Fork Tolt	21B18	26	26N	9E	1900
Skykomish River					
Lake Elizabeth	21B19	33	26N	10E	2900

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Skagit River					
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Brown Top	21A2Ba	26	40N	12E	6000
Devils Park	20A4	34	38N	16E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeout Meadows	20A2	8	40N	16E	5000
Lake Horzomeen	21A2	19	40N	14E	2600
Meadows Cabins	20A8	29	36N	14E	1900
Thunder Basin	20A7	15	35N	14E	4200
Baker River					
Baker Pass	21A27a	1	37N	7E	4900
Dock Butte	21A11A	8	36N	8E	3800
Easy Pass	21A7A	19	39N	11E	5400
Jasper Pass	21A6A	17	38N	11E	5400
Komo Kulshan	21A17	31	37N	9E	800
Marten Lake	21A9A	23	38N	8E	3600
Mount Blum	21A1Ba	27	38N	10E	5800
Rocky Creek	21A12A	20	37N	8E	2100
Schreibers Meadow	21A10A	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8	25	37N	9E	4500
Nooksack River					
Bald Mountain	21A19a	7	40N	7E	4400
Canyon	21A20a	20	40N	8E	5100
Glacier Creek	21A23	9-10	38N	7E	3700
Glacier New	21A26	17	39N	9E	4300
Panorama Snow Pillow	21A25SP	17	39N	9E	4300
Twin Lakes	21A21a	16	40N	9E	5200
OLYMPIC PENINSULA					
Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Morse Creek					
Cox Valley	23B14	29	28N	6W	
Elwha River					
Hurricane	23B3	36	29N	7W	4500
Skokomish River					
Black and White	23B7	17	24N	5W	4200
Black and White Lakes	23B6	16	24N	5W	4700
Four Stream	23B10	1	23N	6W	3000
Home Sweet Home	23B5	28	25N	5W	5200
Sundown Pass	23B8	25	24N	7N	3900
Soleduck River					
Deer Lake	23B1	14	28N	9W	3900
LENDG					
NUMBERING SYSTEM EXAMPLE					
21A7	SNOW COURSE ONLY				
21A7a	AERIAL MARKER ONLY				
21A7A	SNOW COURSE AND AERIAL MARKER				
21A7M	SNOW COURSE AND SOIL MOISTURE STATION				
21A7m	SOIL MOISTURE STATION				
21A7P	SNOW COURSE AND PRECIPITATION STORAGE GAGE				
21A7P	PRECIPITATION STORAGE GAGE				
21A7SP	SNOW PILLOW				

WATER SUPPLY OUTLOOK

State of Washington

April 1, 1971

* As a result of the storm patterns starting the first of March *
* and continuing throughout the month there has been a marked *
* improvement in the water supply picture over the state of *
* Washington and its tributary streams. These storms deposited *
* well above-normal amounts of snow in the mountains for the *
* month of March. Precipitation in all the drainage divisions *
* as measured by the National Weather Service at valley stations *
* also showed above-normal rainfall. As of the first of March *
* the situation was good but had not reached the snowpack ex- *
* perience in 1969. In that year there was a deterioration *
* from March to April. We have now exceeded the 1969 snowpack *
* levels and have approached, and in places even exceeded, the *
* record snowpacks of 1956. The water supply picture is, there- *
* fore, excellent and even with the most adverse climatological *
* conditions, adequate water should be experienced in all por- *
* tions of the state of Washington. *

* The snowpack ranges from 103% of normal to 210% in the upper *
* Columbia portion of the basin. The lower Columbia has a snow *
* cover that ranges from 19% above to 78% above. On the west *
* side, Puget Sound drainage, the snow cover varies from 40% *
* above normal to 82% above. The Olympic Peninsula has a snow *
* cover that varies from 32% above to 50% above. The one low *
* figure in this series is the Sanpoil River. This basin is *
* measured by only one snow course and it appears to be in a *
* pocket that did not receive the snowfall of the surrounding *
* area. Reservoir storage is not a problem this year. Salmon *
* Lake and Conconully reservoirs, in the lower Okanogan drain- *
* age, have well below-normal amounts of water in storage; but *
* there should be no problem in these two reservoirs filling. *
* All other reservoirs will most likely be handled to reduce *
* flood flows in the lower portion of their watersheds. *

* The precipitation during the month ranged from 10% above nor- *
* mal in the southeastern drainage division to 69% above in *
* the Yakima, Wenatchee and Chelan drainages. River flows were *
* generally near normal during the month with only the Chehalis *
* reporting well above-normal runoff. *

SNOW COVER

In 1969 the snowpack was well above normal on March 1, but there was a deterioration during the month. This year there has been an increase during the month until the overall snow cover is approaching the 1956 record highs. East of the Cascades, the



Spokane in Idaho and the Sanpoil are the only two watersheds with snowpacks that are less than 20% above average. In the lower Columbia only Mill Creek drainage has less than 20% above-normal snowpack. West of the Cascades there are no watersheds with less than 20% above-average snowpacks. Elevationwise, the snow cover is heavy down to the lower elevations. Some of the biggest snowpacks, percentagewise, are in these low-elevation areas. In most years many of these snow courses are bare and so a somewhat false impression is obtained.

RESERVOIRS

There is very little chance that all reservoirs, whether for power or irrigation, will not fill with the spring runoff. About half of the reservoirs in the state have less than normal amounts of water in storage as of April 1. Some of these are a result of early draw-down for flood control while others are the result of heavy use last year with little inflow to date.

PRECIPITATION

In the November through March period, the National Weather Service reports only the northeast and southeast divisions of the state have had below-normal rainfall and these are close enough to average to be called normal. The range, percentagewise, is from 2% below to 30% above. During March, all valley precipitation was well above average ranging from 10% above for the southeast to 69% above for the central drainage division.

STREAMFLOW

Although the precipitation was above normal during March streamflow was near average. This shows up in the increased snowpacks reported above. The high streamflow during the month occurred on the Chehalis River, on the west side, and this primarily the result of low-elevation melting and rainfall. The Okanogan River at Tonasket had the least amount of runoff. Forecasts of streamflows have all been increased from those which were reported last month. Flows are now expected to range from 4% above normal for the Columbia River at Birchbank to 40% above normal for most of the gaging stations in the Yakima River basin. On the Olympic Peninsula the Dungeness River is expected to flow only 10% above normal. Most forecasts are in the 30% to 40% range. Numerical forecasts are found following this narrative.



STREAMFLOW FORECASTS - APRIL 1971

The following summarized runoff forecasts are based principally on mountain snow cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts. Streamflow figures for 1970 are preliminary and subject to revision.

Basin, Stream and Station	Forecast Runoff 1971	% 15-Yr. Avg.	Seasonal Streamflow in Thousands of Acre-Feet				
			Fore- cast Period	1970	1969	1968	15-Yr. Average 1953-67
<u>COLUMBIA BASIN</u>							
<u>Columbia River System</u>							
Columbia River							
at Birchbank <u>1/</u>	48200	104	Apr-Sep	34443	47990	47182	46368
	39700	106	Apr-Jul	27808	40549	37092	37480
	28900	107	Apr-Jun	20918	32212	25280	27040
Columbia River							
at Grand Coulee <u>1/</u>	77200	111	Apr-Sep	54604	74687	63784	69458
	66000	112	Apr-Jul	46518	65696	51685	58899
	51800	113	Apr-Jun	37541	54604	38183	45889
Columbia River							
bl Rock Island Dam <u>1/</u>	85250	112	Apr-Sep	59163	80257	70298	76241
	72200	113	Apr-Jul	50711	71039	57403	64770
	57400	114	Apr-Jun	41070	59289	42326	50387
Columbia River							
at The Dalles, OR <u>1/</u>	125000	119	Apr-Sep	87067	108959	89008	105176
	108000	120	Apr-Jul	75146	96628	72494	90050
	87000	120	Apr-Jun	62267	82719	55499	72410
<u>Pend Oreille River System</u>							
Pend Oreille River							
bl. Box Canyon	19500	122	Apr-Sep	14234	16166	12869	15991
	18200	123	Apr-Jul	13267	15055	11077	14772
	15700	123	Apr-Jun	11627	13033	9471	12746
<u>Kettle River System</u>							
Kettle River							
nr. Laurier	2260	118	Apr-Sep	1123	2239	1851	1918
	2190	120	Apr-Jul	1092	2188	1720	1821
	2000	122	Apr-Jun	1027	2048	1560	1644

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.

Streamflow Forecasts - April 1971 (Cont.)

Basin, Stream and Station	Forecast Runoff 1971	% 15-Yr. Avg.	Fore- cast Period	Seasonal Streamflow in Thousands of Acre-Feet			
				1970	1969	1968	15-Yr. Average 1953-67
<u>Kettle River System (Cont.)</u>							
Colville River							
at Kettle Falls	210	137	Apr-Sep	94	270	63	153
	195	138	Apr-Jul	86	256	54	141
	180	137	Apr-Jun	80	240	50	131
<u>Spokane-River System*</u>							
Spokane River							
at Post Falls ID <u>2/</u>	3300	105	Apr-Sep	2862	3552	1685	3151
	3200	105	Apr-Jul	2770	3463	1537	3055
	3060	105	Apr-Jun	2627	3350	1443	2913
<u>Okanogan River System**</u>							
Similkameen River							
nr. Nighthawk	2010	132	Apr-Sep	861	1199	1449	1525
	1890	133	Apr-Jul	820	1150	1359	1419
	1600	134	Apr-Jun	751	1052	1158	1197
Okanogan River							
nr. Tonasket	2360	136	Apr-Sep	923	1448	1567	1738
	2160	137	Apr-Jul	864	1353	1429	1578
	1830	139	Apr-Jun	785	1231	1202	1318
<u>Methow River System**</u>							
Methow River							
nr. Pateros	1380	131	Apr-Sep	622	1060	973	1054
	1290	132	Apr-Jul	587	1013	906	981
	1110	133	Apr-Jun	532	948	767	834
<u>Chelan River System</u>							
Chelan River							
at Chelan <u>3/</u>	1710	135	Apr-Sep	907	1337	1224	1266
	1520	136	Apr-Jul	821	1230	1069	1119
	1190	137	Apr-Jun	689	1093	798	870
Stehekin River							
at Stehekin	1180	130	Apr-Sep		961	868	904
	1000	130	Apr-Jul		853	735	772
	760	130	Apr-Jun		748	535	586

* Forecasts made by Morland W. Nelson and J. Alden Wilson, Soil Conservation Service, Boise, Idaho.

** These forecasts are based in part upon base flow data especially prepared and furnished for this purpose by the U. S. Geological Survey.

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage in Lake Chelan.

Streamflow Forecasts - April 1971 (Cont.)

Streamflow Forecasts April 1971 (Cont.)			Seasonal Streamflow in Thousands of Acre-Feet				
Basin, Stream and Station	Forecast Runoff 1971	% 15-Yr. Avg.	Fore- cast Period	1970	1969	1968	15-Yr. Average 1953-67
<u>Kettle River System (Cont.)</u>							
Colville River							
at Kettle Falls	210	137	Apr-Sep	94	270	63	153
	195	138	Apr-Jul	86	256	54	141
	180	137	Apr-Jun	80	240	50	131
<u>Spokane-River System*</u>							
Spokane River							
at Post Falls ID <u>2/</u>	3300	105	Apr-Sep	2862	3552	1685	3151
	3200	105	Apr-Jul	2770	3463	1537	3055
	3060	105	Apr-Jun	2627	3350	1443	2913
<u>Okanogan River System**</u>							
Similkameen River							
nr. Nighthawk	2010	132	Apr-Sep	861	1199	1449	1525
	1890	133	Apr-Jul	820	1150	1359	1419
	1600	134	Apr-Jun	751	1052	1158	1197
Okanogan River							
nr. Tonasket	2360	136	Apr-Sep	923	1448	1567	1738
	2160	137	Apr-Jul	864	1353	1429	1578
	1830	139	Apr-Jun	785	1231	1202	1318
<u>Methow River System**</u>							
Methow River							
nr. Pateros	1380	131	Apr-Sep	622	1060	973	1054
	1290	132	Apr-Jul	587	1013	906	981
	1110	133	Apr-Jun	532	948	767	834
<u>Chelan River System</u>							
Chelan River							
at Chelan <u>3/</u>	1710	135	Apr-Sep	907	1337	1224	1266
	1520	136	Apr-Jul	821	1230	1069	1119
	1190	137	Apr-Jun	689	1093	798	870
Stehekin River							
at Stehekin	1180	130	Apr-Sep		961	868	904
	1000	130	Apr-Jul		853	735	772
	760	130	Apr-Jun		748	535	586

* Forecasts made by Morland W. Nelson and J. Alden Wilson, Soil Conservation Service, Boise, Idaho.

** These forecasts are based in part upon base flow data especially prepared and furnished for this purpose by the U. S. Geological Survey.

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage in Lake Chelan.

Streamflow Forecasts - April 1971 (Cont.)

Basin, Stream and Station	Forecast Runoff 1971	% 15-Yr. Avg.	Seasonal Streamflow in Thousands of Acre-Ft.				15-Yr Avg. 1953-67
			Fore- cast Period	1970	1969	1968	
<u>Wenatchee River System</u>							
<u>Wenatchee River</u>							
at Plain	1670	125	Apr-Sep	1019	1443	1163	1333
	1500	125	Apr-Jul	941	1349	1028	1204
	1190	125	Apr-Jun	804	1217	812	952
<u>Wenatchee River</u>							
at Peshastin	2270	125	Apr-Sep	1416	1953	1526	1814
	2080	126	Apr-Jul	1318	1840	1355	1651
	1660	126	Apr-Jun	1132	1669	1087	1316
<u>Stemilt Basin</u>							
nr. Wenatchee	140	--	May-Sep	--	145	140	
<u>Yakima River System</u>							
<u>Yakima River</u>							
nr. Martin <u>4/</u>	193	133	Apr-Sep	130	156	97	145
	177	132	Apr-Jul	121	144	79	134
	153	132	Apr-Jun	112	136	73	116
<u>Yakima River</u>							
at Cle Elum <u>5/</u>	1320	136	Apr-Sep		1051	695	968
	1200	136	Apr-Jul		977	589	885
	1030	135	Apr-Jun		912	510	762
<u>Yakima River</u>							
nr. Parker <u>6/</u>	2480	140	Apr-Sep		1989	959	1772
	2420	138	Apr-Jul		2005	863	1752
	2190	136	Apr-Jun		1980	826	1608
<u>Kachess River</u>							
nr. Easton <u>7/</u>	180	140	Apr-Sep	112	139	76	128
	170	140	Apr-Jul	110	134	66	122
	150	140	Apr-Jun	104	128	62	107
<u>Cle Elum River</u>							
nr. Roslyn <u>8/</u>	655	135	Apr-Sep	429	496	358	485
	595	134	Apr-Jul	396	473	311	445
	495	133	Apr-Jun	345	440	264	373
<u>Bumping River</u>							
nr. Nile <u>9/</u>	210	140	Apr-Sep	129	150	105	150
	195	140	Apr-Jul	121	142	93	138
	160	140	Apr-Jun	107	133	73	114

* Thousands of Miners' Inches.

4/ Observed flow corrected for storage in Lake Keechelus.

5/ Observed flow corrected for storage in Keechelus, Kachess and Cle Elum Lakes and diversion by Kittitas Canal.

6/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation and Sunnyside Canals.

7/ Observed flow corrected for storage in Lake Kachess.

8/ Observed flow corrected for storage in Lake Cle Elum.

9/ Observed flow corrected for storage in Bumping Lake.

Basin Stream and Station	Forecast Runoff 1971	% 15-Yr. Avg.	Seasonal Streamflow in Thousands of Acre-Feet				
			Fore- cast Period	1970	1969	1968	15-yr. Average 1953-67

Yakima River System (Cont.)

<u>American River</u>							
nr. Nile	180	140	Apr-Sep	128	138	98	129
	170	142	Apr-Jul	120	130	88	120
	140	141	Apr-Jun	106	120	78	99
<u>Tieton River</u>							
at Tieton Dam <u>10/</u>	330	131	Apr-Sep	245	273	166	251
	290	135	Apr-Jul	211	244	134	215
	230	134	Apr-Jun	175	220	111	172
<u>Naches River</u>							
nr. Naches <u>11/</u>	1210	135	Apr-Sep		994	592	899
	1110	136	Apr-Jul		926	511	819
	960	137	Apr-Jun		857	437	698
<u>Ahtanum Creeks <u>12/</u></u>							
nr. Tampico	65	133	Apr-Sep		57	31	49
	60	135	Apr-Jul		53	27	45
	55	138	Apr-Jun		49	24	40

Lower Columbia River System

<u>Mill Creek</u>							
nr. Walla Walla	33	113	Apr-Sep		32	15	29
	29	116	Apr-Jul		29	11	25
	27	117	Apr-Jun		27	10	23
<u>Lewis River</u>							
at Arial <u>13/</u>	1880	138	Apr-Sep	869	1613	1173	1358
	1660	139	Apr-Jul	775	1431	895	1197
	1460	138	Apr-Jun	704	1303	798	1059
<u>Cowlitz River</u>							
at Castle Rock <u>14/</u>	3660	130	Apr-Sep	2079	2965	2381	2813
	3220	130	Apr-Jul	1834	2641	1850	2481
	2750	130	Apr-Jun	1614	2359	1630	2119

OLYMPIC PENINSULA

Dungeness River System

<u>Dungeness River</u>							
nr. Sequim	190	110	Apr-Sep		195	134	172
	160	113	Apr-Jul		167	107	141
	120	114	Apr-Jun		139	78	105

- 10/ Observed flow corrected for storage in Rimrock Lake.
- 11/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals and City of Yakima.
- 12/ Observed flow of North and South Forks (combined).
- 13/ Observed flow corrected for storage in Lake Merwin, Yale and Swift Reservoirs.
- 14/ Observed flow corrected for storage in Mayfield Reservoir.

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about April 1, 1971, as per cent of the same date in 1970 and 1969 and average of record.

Tributary Basin	No. of Courses Average	Years of Record	1971 Snow Water Expressed as percent of		
			1970	1969	1953-67

UPPER COLUMBIA BASIN

Pend Oreille	15 - 18	7 - 34	136	106	133*
Kettle	11 - 13	8 - 33	164	97	180*
Colville	5	12	166	109	158*
Spokane	11	7 - 34	130	102	118*
Sanpoil	1	32	117	70	103*
Okanogan	27 - 31	6 - 36	158	135	140*
Methow	6	10 - 29	145	112	135*
Chelan	3 - 4	10 - 39	191	125	142*
Entiat	8 - 9	4 - 6	188	123	--
Wenatchee	8 - 10	10 - 39	179	125	170*
Yakima	18 - 19	5 - 51	154	127	172*
Ahtanum	1	22	125	79	210*

LOWER COLUMBIA

Mill Creek	3	6 - 21	183	75	119*
Klickitat	1	27	201	111	--
White Salmon	2	27	204	141	157*
Lewis	10 - 18	10 - 27	207	135	178*
Cowlitz	8 - 10	8 - 31	204	146	164

PUGET SOUND

Nisqually	3 - 4	6 - 21	178	164	182*
White	3	15 - 31	185	136	148*
Green	5 - 8	10 - 25	222	119	140*
Cedar	4 - 7	9 - 10	382	114	182*
Snoqualmie	2 - 4	3 - 25	217	114	167*
Skykomish	2 - 3	13 - 24	205	128	161*
Skagit	11 - 14	20 - 39	205	145	159*
Nooksack	5	3 - 9	176	122	--
Baker	5 - 11	2 - 13	194	122	154*

OLYMPIC PENINSULA

Skokomish	4 - 5	7 - 21	227	136	150*
Elwha	1	21	265	121	136*
Dungeness	1	21	124	125	132*

* Records of less than 15 years used on computation of average

RESERVOIR STORAGE - 1000 Acre Feet

BASIN or STREAM	RESERVOIR	USABLE ^{1/} CAPACITY	1971	1970	Measured April 1969	Normal*
<u>COLUMBIA</u>						
Spokane	Coeur d'Alene Lake	225.1	137.9	133.8	227.5	164.0
Columbia	Franklin D. Roosevelt Lake	5232.0	1534.2	2111.5	***	2359.6
Columbia	Banks Lake	761.8	674.8	698.9	693.5	499.3
Okanogan	Conconully Reservoir	13.0	6.1	8.0	5.2	6.7
Okanogan	Salmon Lake	10.5	2.1	7.4	6.3	8.5
Chelan	Lake Chelan	676.1	179.9	22.0	88.2	169.0
<u>YAKIMA</u>						
Yakima	Keechelus Lake	157.8	122.4	76.0	102.2	102.8
Kachess	Kachess Lake	239.0	190.7	181.5	181.5	184.4
Cle Elum	Lake Cle Elum	436.9	251.8	199.5	271.3	278.8
Bumping	Bumping Lake	33.7	3.3	7.2	3.3	14.0
Tieton	Rimrock Lake	198.0	139.6	110.1	158.2	135.8
<u>PUGET SOUND</u>						
Skagit	Ross Reservoir	1202.9	757.2	568.5	480.3	715.2
Skagit	Diablo Reservoir	90.6	84.3	96.6	88.3	85.5
Skagit	Gorge Reservoir	9.8	8.3	8.4	8.1	--

^{1/} Based on Active Storage

* 15-year average 1953-67

*** Reservoir drawn down to below usable capacity

SOIL MOISTURE - April

Drainage Basin and Station	Number	Elev.	Profile Depth	(Inches):	Soil Moisture Content		
				Total : Capacity:	(Inches) as of April 1		
					1971	1970	1969
<u>CRAB CREEK</u>							
Jack Woods	18B3m	2600	48	13.6	10.1	10.4	9.8
Krause	18B4m	2440	48	13.6	9.3	9.6	8.4
Sheffels	18B5m	2360	48	13.6	9.1	8.2	7.0
Sherman	18B7m	2440	48	13.6	8.9	8.2	6.7
Wheatridge	18B6m	2200	48	13.6	10.4	9.5	9.5
<u>OKANOGAN</u>							
Salmon Meadows	19A2M	4500	48	5.4	3.6	2.4	3.2
Trout Creek	3-M	3600	48	7.3	2.9*	--	6.5
<u>YAKIMA</u>							
Domery Flat	21B20m	2200	48	6.9	4.9	5.6	--
Lake Cle Elum	21B14M	2200	48	12.8	9.2	9.2	--
<u>WALLA WALLA</u>							
Couse	17C3m	3650	48	11.1	10.6	10.4	10.9
Helmerts	17C2M	4400	48	12.0	11.0	11.2	11.5
<u>WENATCHEE</u>							
Upper Wheeler	20B7M	4400	48	12.7	10.1*	6.9	10.7

* March 1 measurement

FALL SOIL MOISTURE

Drainage Basin and Station	Number	Elev.	Profile Depth	(Inches):	Soil Moisture Content		
				Total : Capacity:	(Inches) as of Oct. 1		
					1970	1969	1968
<u>CRAB CREEK</u>							
Jack Woods	18B3m	2600	48	13.6	7.0	7.5	7.1
Krause	18B4m	2440	48	13.6	4.4	5.9	5.2
Sheffels	18B5m	2360	48	13.6	4.4	4.5	4.9
Sherman	18B7m	2440	48	13.6	3.8	4.2	3.9
Wheatridge	18B6m	2200	48	13.6	7.8	5.4	4.6
<u>OKANOGAN</u>							
Salmon Meadows	19A2M	4500	48	5.4	1.7	2.7	2.7
Trout Creek	3-M	3600	48	7.3	3.4*	3.8*	4.1
<u>YAKIMA</u>							
Domery Flat	21B20m	2200	48	6.9	2.4	--	3.1
Lake Cle Elum	21B14M	2200	48	12.8	7.6	--	5.2
<u>WALLA WALLA</u>							
Couse	17C3m	3650	48	11.1	5.9	6.1	7.4
Helmerts	17C2M	4400	48	12.0	7.3	7.1	7.6
<u>WENATCHEE</u>							
Upper Wheeler	20B7M	4400	48	12.7	5.1	9.8	5.5

* November 1 measurement

PRECIPITATION ^{1/}

Division Averages and Departures

Drainage Divisions	FALL		WINTER	
	Sep - Oct	1970 ^{2/}	Nov - 1970	Mar 1971 ^{2/}
	Observed	Departure	Observed	Departure
Columbia in Canada	3.64	-0.25	15.63	+2.94
Pend Oreille - Spokane	4.30	+0.42	19.87	+1.62
Northeastern Washington	3.16	+0.91	11.07	-0.02
Southeastern Washington	3.59	+0.94	12.11	-0.30
Central Washington	3.05	-1.39	33.80	+6.67
North Central Washington	1.36	-0.05	8.22	+1.88
Northwest Slope Cascades	12.29	+0.62	63.74	+11.60
Southwest Slope Cascades	7.74	+0.02	52.21	+11.34

Northeastern Washington	- Lower Spokane, Colville, Sanpoil and lower Kettle drainages.
Southeastern Washington	- Touchet, Tucannon and Palouse drainages.
Central Washington	- Yakima, Wenatchee and Chelan drainages.
North Central Washington	- Methow and Okanogan drainages.
Northwest Slope Cascades	- Puget Sound drainages.
Southwest Slope Cascades	- Lower Columbia drainages.

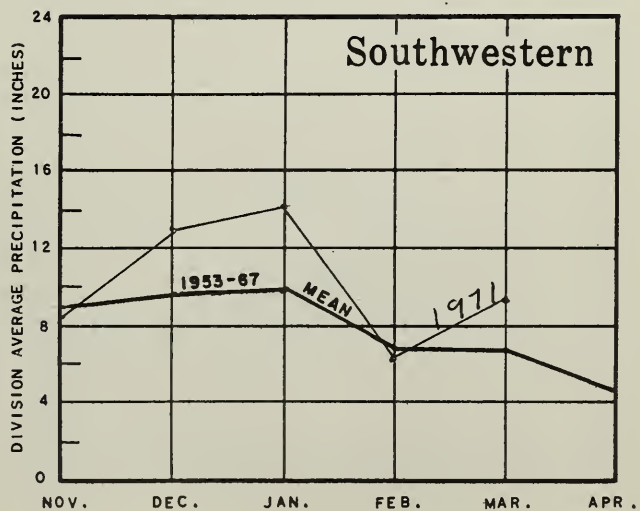
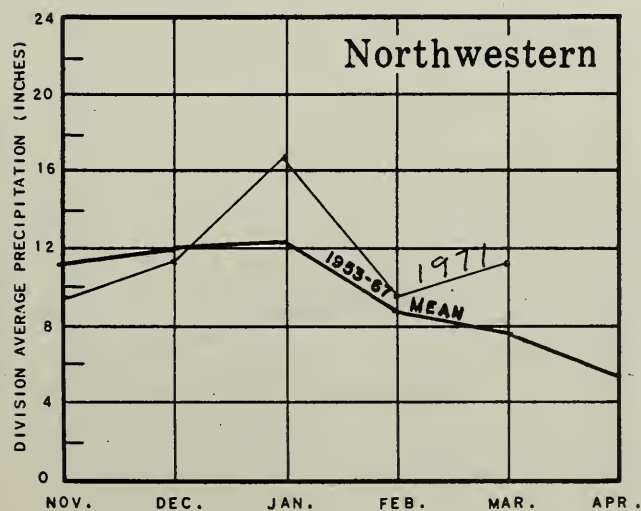
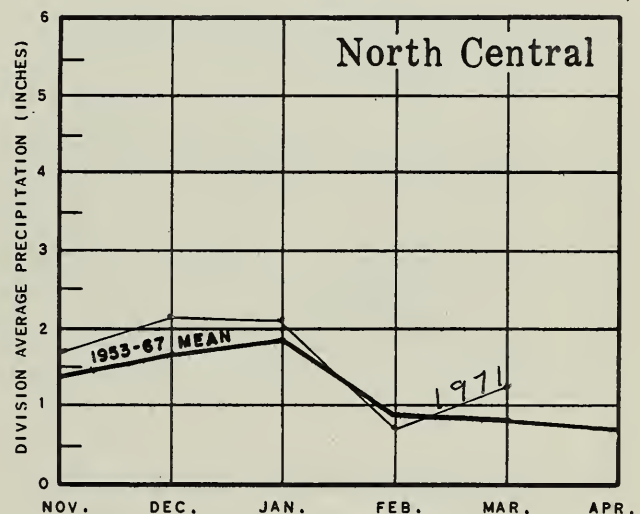
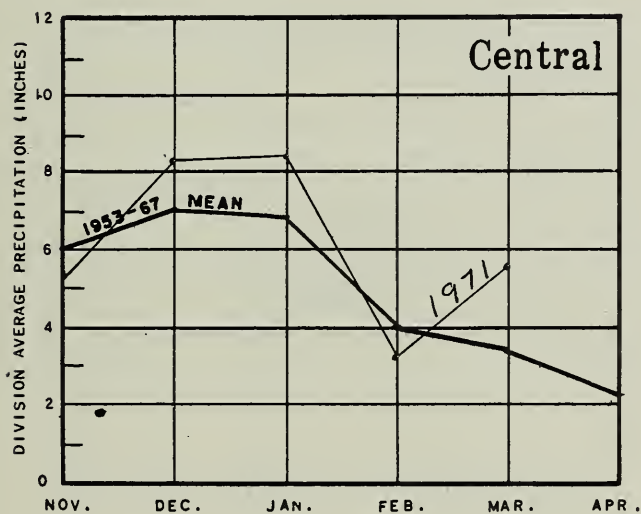
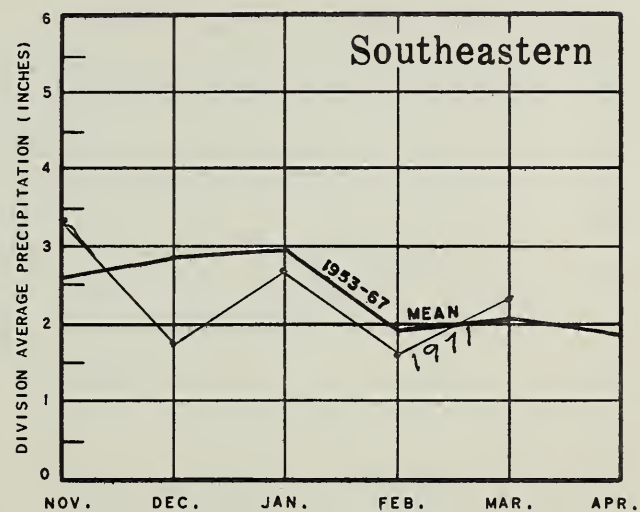
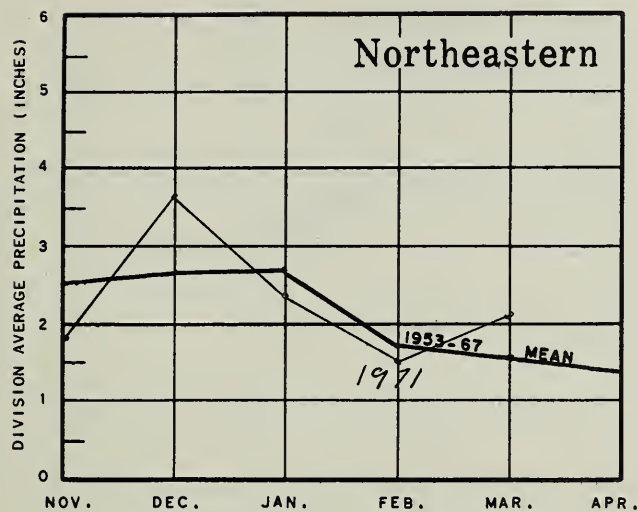
^{1/} - Preliminary analysis by U. S. Weather Bureau from data furnished by Meteorological Services of Canada and U. S. Weather Bureau

^{2/} - Departure from 15-year (1953-67) drainage division average.

WASHINGTON VALLEY PRECIPITATION

1970-1971

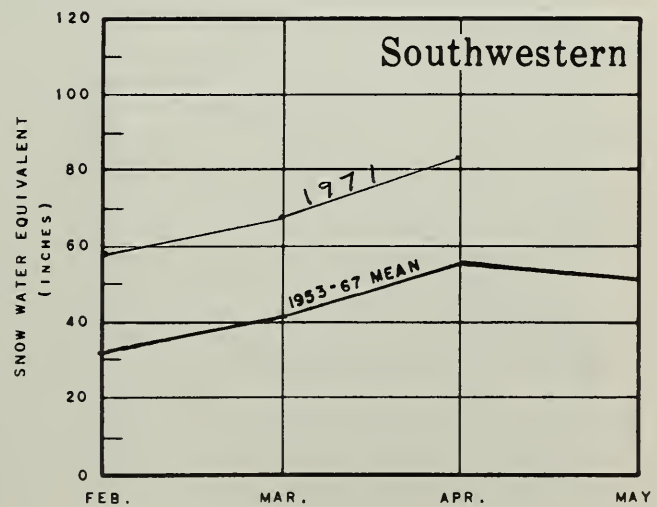
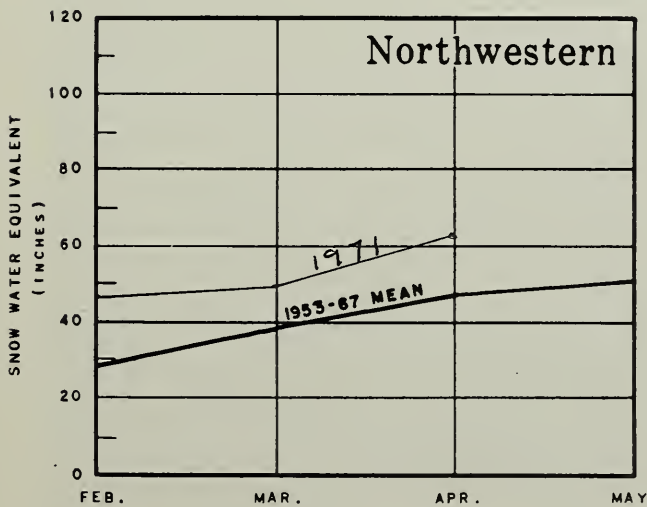
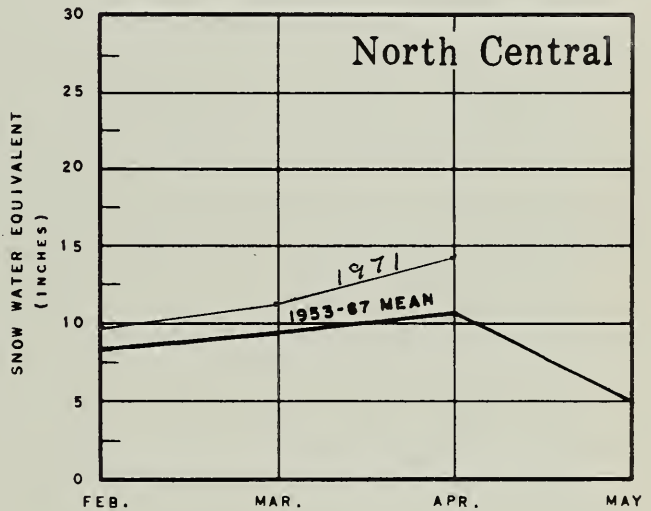
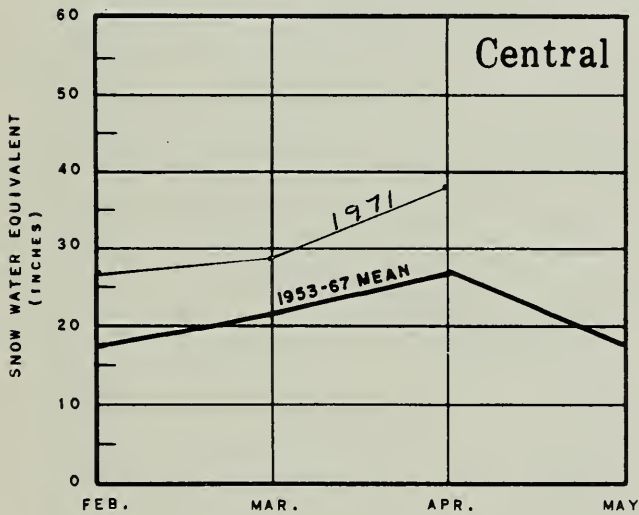
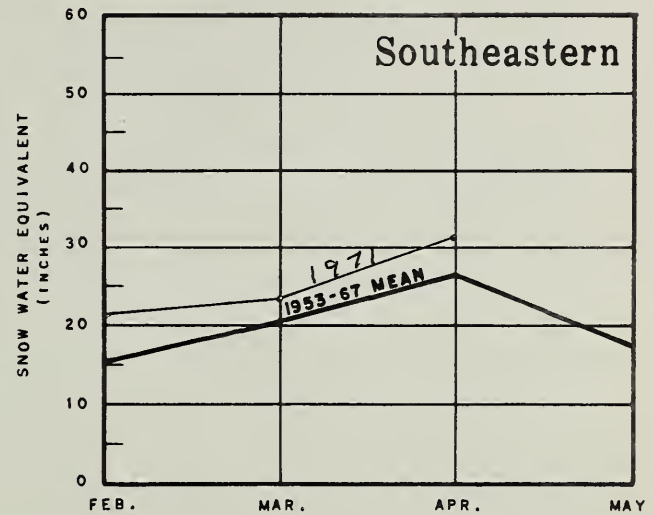
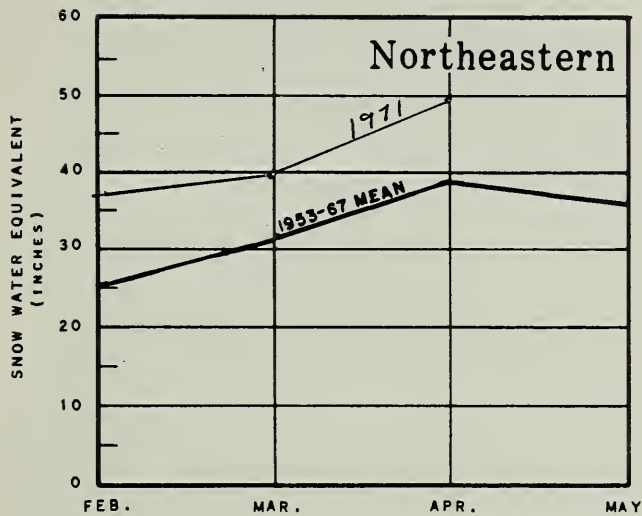
DRAINAGE AREAS



WASHINGTON SNOW COVER

1971

DRAINAGE AREAS



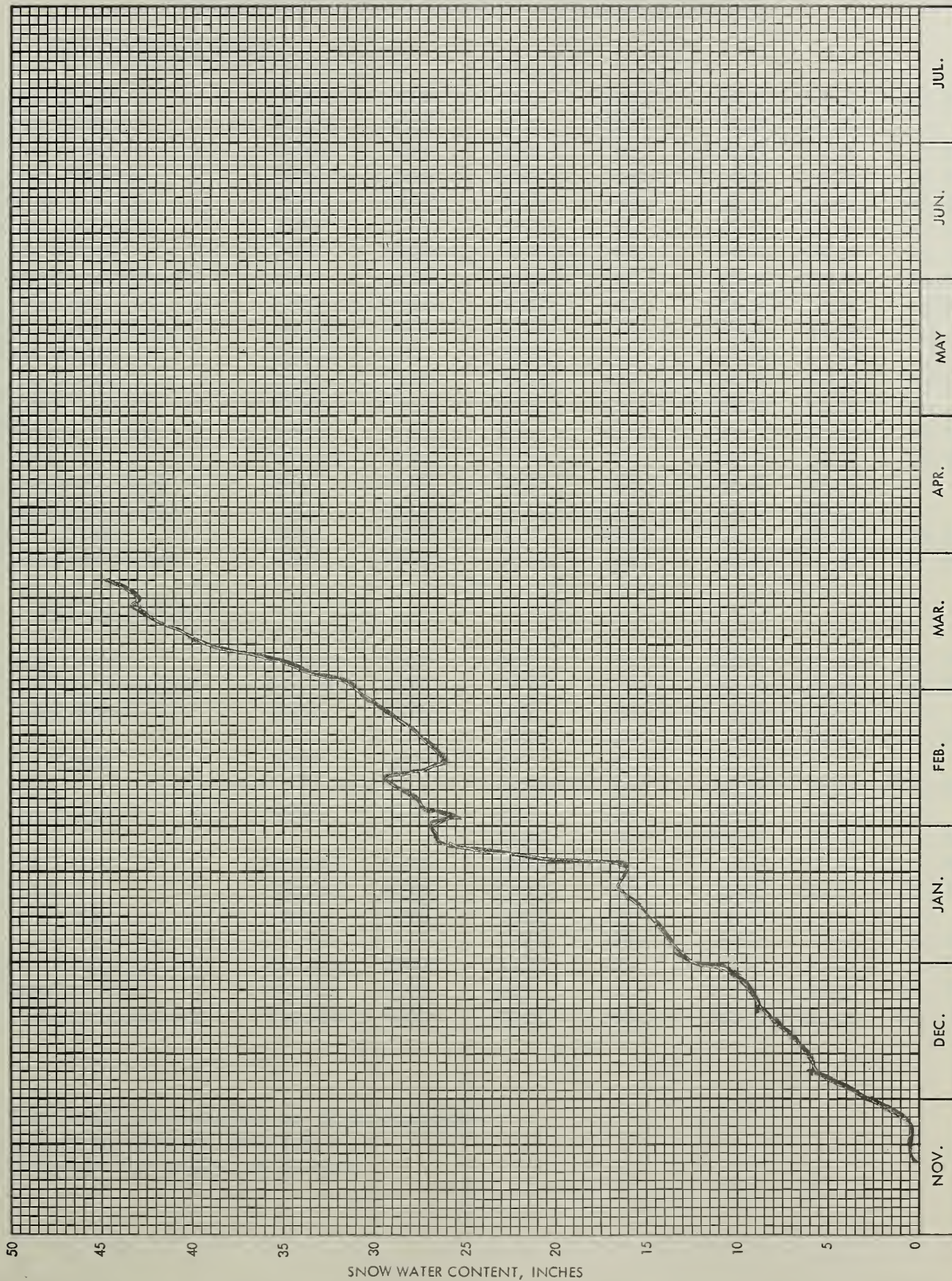
SNOW PILLOW DATA

Cougar Mountain - FS

1970 - 71

Sec. 28 T. 21N R. 9E No. 21B42SP Drainage: Green River

Lat. 47° 17' Long. 121° 40' Elev. 3200'



APPENDIX 1

SNOW DATA MARCH 1 to APRIL 1, 1971

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average ^{††}

U P P E R C O L U M B I A D R A I N A G EPEND OREILLE RIVER

Baree Creek	15B11	5500	4/1	140	57.5	42.6	49.6
Baree Midway	15B16	4600	4/1	103	41.8	35.5	--
Baree Trail	15B15	3800	4/1	41	16.2	13.2	7.8
Benton Meadow	16A2	2344	4/1	16	6.2	6.2	3.2
Benton Spring	16A3	4900	3/29	66	22.2	20.8	20.8
Boyer Mountain	17A2	5250	3/29	94	36.0	25.6	27.9
Brush Creek	14A4	5000	3/30	47	13.2	13.0	13.1
Bunchgrass Meadow	17A1	5000	3/30	92	32.4	25.7	31.8
#Chewelah	17A4	4925	3/28	62	19.4	16.8	19.2*
Heart Lake Trail	14C10	4800	3/30	79	33.2	20.8	23.0
Hoodo Basin	15C10	4800	3/30	157	67.8	47.8	--
Hoodo Creek	15C1	6200	3/30	157	64.2	44.1	50.6
Lookout	15B2	5250	4/1	131	49.8	34.6	38.4
Mosquito Ridge	16A4A	5100	4/1	114	44.0	37.8	40.2*
Nelson	Canada	3050	3/31	60	20.6	13.2	15.6**
Schweitzer Bowl	16A6	4500	3/30	105	38.8	29.3	--
Schweitzer Ridge	16A5	6100	3/30	140	55.5	40.2	--
Smith Creek	16A1	4800	3/30	163	64.7	31.9	50.1
Winchester Creek	17A3	2970	3/29	53	18.4	11.9	11.3*

KETTLE RIVER

Barnes Creek	Canada	5500	4/2	70	23.1	14.4	21.2**
Big White Mountain	Canada	5500	3/31	76	20.9	14.8	19.0**
Boulder Road	18A2	1450	3/9	24	8.0	--	--
			3/25	20	7.8	0.0	1.8*
Butte Creek	18A3	4070	3/9	38	10.3	--	--
			3/25	39	11.7	9.4	9.9*
Cabin Creek	18A8	3170	3/9	35	10.0	--	--
			3/25	36	11.3	8.7	8.9*
Carmi	Canada	4100	3/31	27	8.6	5.7	5.8**
Farron	Canada	4000	3/30	60	19.0	11.4	13.2**
Goat Creek	18A4	3595	3/29	31	9.2	--	--
			3/25	28	9.2	5.4	6.5*
Lower Trapping Cr.	Canada	3050	3/31	21	7.4	2.4	2.7**
#Monashee Pass	Canada	4500	4/2	51	15.5	8.9	13.7**
Old Glory Mountain	Canada	7000	3/27	90	30.0	21.1	27.1**

Not located directly on this drainage

* Adjusted 1953-67 average

** Average for years of record

APPENDIX 2

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average††

KETTLE RIVER (Cont.)

Snow Caps Creek	18A5	2150	3/9	24	7.3	--	--
			3/25	17	6.5	0.0	1.9*
Snow Caps Trail	18A6	2720	3/9	32	9.1	--	--
			3/25	28	9.2	4.6	5.7*
Summit G. S.	18A7	4600	3/9	32	8.6	--	--
			3/25	34	9.2	7.9	9.6*
Upper Trapping Cr.	Canada	5500	3/31	42	11.4	7.4	8.6**

COLVILLE RIVER

Baird	17A6	3215	3/27	28	8.0	7.5	6.4*
Carlson	18A9	2885	3/28	17	6.0	2.4	2.7*
Chewelah	17A4	4925	3/28	62	19.4	16.8	19.2*
Stranger Mountain	17A5	4990	3/28	69	22.3	14.2	14.3*
Togo	18A10	3370	3/28	60	20.8	10.3	11.2*

SPOKANE RIVER

Above Burke	15B8	4100	3/27	81	34.0	22.8	25.0*
Above Roland	15B7	4350	4/1	106	45.1	36.5	34.8*
Below Roland	15B6	3770	4/1	50	20.9	19.9	17.0*
Copper Ridge	16B2	4800	3/29	81	31.5	27.5	31.1
Forty-nine Meadows	15B3	5000	4/1	118	46.0	30.2	36.1
Fourth of July Summit	16B3	3100	3/15	38	11.2	10.0	--
			4/1	30	10.9	8.0	11.2*
Granite Peak	15B13A	6000	4/1	166	64.4	42.6	51.2*
Kellogg Peak	16B5A	5560	4/1	115	46.3	29.8	33.5*
#Lookout	15B2	5250	4/1	131	49.8	34.6	38.4
Lost Lake	15B14A	6000	Not Measured			51.6	66.2*
Lower Sands Creek	16B1	3400	3/29	66	24.6	20.6	21.0
Medicine Ridge	15B4A	6150	4/1	150	55.1	42.8	--
#Mosquito Ridge	16A4A	5110	4/1	114	44.0	37.8	40.2*
Outlaw Creek	15B12A	3750	4/1	70	26.1	15.1	17.8*
Sherwin	16C1	3200	3/31	43	14.7	11.4	16.6*
Sunset	15B9A	5600	4/1	119	46.1	32.6	35.6*
Roland Summit	15B5A	5200	4/1	126	53.0	--	--

SANPOIL RIVER

Sherman Creek Pass	18A1	5350	3/29	55	15.6	13.3	15.2
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Not located directly on this drainage

* Adjusted 1953-67 average

** Average for years of record

APPENDIX 3

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average††
<u>OKANOGAN RIVER</u>							
Aberdeen Lake	Canada	4300	3/30	26	7.0	4.7	6.1**
Blackwall Peak	Canada	6250	3/30	126	47.5	27.3	33.3**
Bouleau Creek	Canada	5000	3/31	53	15.8	10.2	11.8**
Brenda Mine	Canada	4800	3/29	57	17.0	9.6	--
Brookmere	Canada	3200	3/28	48	16.6	8.0	9.6**
Carrs Landing Lower	Canada	2250	3/27	5	1.5	0.0	--
Carrs Landing Upper	Canada	3200	3/27	22	5.2	4.4	3.3**
Clark +	19A8a	7000	4/1	88	29.9	--	23.1*
Copper Mountain	Canada	4300	3/28	23	7.7	5.4	5.5**
Enderby	Canada	6250	3/25	126	38.1	33.6	37.2**
#Freezeout Meadows	20A2	5000	4/3	143	58.0	23.4	32.6
Hamilton Hill	Canada	4900	3/27	61	19.3	13.1	14.4**
#Harts Pass	20A5A	6500	4/1	157	61.1	36.6	46.6
#Horseshoe Basin +	19A5a	7000	4/3	64	24.3	16.4	13.5*
Isintok Lake	Canada	5510	3/27	35	9.5	5.5	6.7**
Lost Horse Mountain	Canada	6300	3/31	50	12.4	7.8	7.5**
#Loup Loup	19A7	4650	3/30	47	13.3	9.5	8.7*
Lower Esperon Cr.	Canada	4270	3/28	57	16.3	10.6	--
McCulloch	Canada	4200	3/29	35	8.0	5.8	6.6**
Middle Esperon Cr.	Canada	4580	3/28	74	21.8	12.0	--
Missezula Mountain	Canada	5100	3/30	43	14.0	7.2	7.8**
Mission Creek	Canada	6000	3/29	77	25.1	14.0	19.9**
Monashee Pass	Canada	4500	4/2	51	15.5	8.9	13.7**
Mount Kobau	Canada	5950	3/31	52	16.8	11.7	12.9**
Muckamuck +	19A9a	6390	4/1	62	21.1	--	17.5*
Mutton Cr. No. 1	19A1	5700	3/29	58	18.4	13.0	14.1
Mutton Cr. No. 2	19A4	6000	3/29	61	20.6	13.0	15.1
New Copper Mountain	Canada	4300	3/26	29	10.6	6.1	4.4**
New Penticton Res #2	Canada	6200	3/30	39	10.0	6.8	8.4**
Nickel Plate Mountain	Canada	6200	3/30	39	12.1	7.6	7.5**
Paysayten +	20A28a	4300	4/3	68	25.8	14.7	14.9*
Postill Lake	Canada	4500	3/31	42	11.6	7.7	8.7**
#Quartette Lake	Canada	4000	3/26	57	18.9	12.8	14.9**
Rusty Creek	19A3	4000	3/30	26	8.8	7.4	7.0
Salmon Meadows	19A2	4500	3/29	47	14.2	10.0	10.6
Silver Star Mountain	Canada	6050	3/28	93	34.8	22.6	26.1**
Starvation Mountain +	19A10a	6750	4/1	69	23.5	--	22.7*
Summerland Reservoir	Canada	4200	3/28	46	13.5	7.5	8.7**
Touts Coulee	19A6	2845	3/31	15	4.4	--	--
Trout Creek	Canada	4700	3/29	37	10.1	6.4	7.0**
Upper Esperon Creek	Canada	5290	3/28	79	26.5	15.2	--
White Rocks Mountain	Canada	6000	3/29	88	34.1	18.5	20.2**

Not located directly on this drainage

+ Snow water equivalent estimated from aerial stadia observation

* Adjusted 1953-67 average

** Average for years of record

APPENDIX 4

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average††

METHOW RIVER

Billy Goat Pass +	20A10a	6409	4/3	140	53.2	30.8	34.4*
Dollar Watch +	20A29a	7000	4/3	96	36.5	26.2	27.6*
Harts Pass	20A5A	6500	4/1	157	61.1	36.6	46.6
Horseshoe Basin +	19A5a	7000	4/3	64	24.3	16.4	13.5*
Loup Loup	19A7	4650	3/30	47	13.3	9.5	8.7*
#Mutton Creek No. 1	19A1	5700	3/29	58	18.4	13.0	14.1
#Mutton Creek No. 2	19A4	6000	3/29	61	20.6	13.0	15.1
#Rusty Creek	19A3	4000	3/30	26	8.8	7.4	7.0
#Salmon Meadows	19A2	4500	3/29	47	14.2	10.0	10.6
#War Creek Pass +	20A31a	6500	4/3	147	57.3	26.2	--

CHELAN LAKE BASIN

Lyman Lake	20A23A	5900	3/22	203	82.4	46.6	58.5
Park Creek Flat +	20A13a	2220	Not Measured			--	34.4*
Park Creek Ridge +	20A12A	4600	3/30	167	66.8	33.7	46.5
Rainy Pass	20A9	4780	4/1	144	57.6	31.0	41.2
Safety Harbor	20A30A	6300	3/25	110	42.7	20.9	--
War Creek Pass +	20A31a	6500	4/3	147	57.3	26.2	--

ENTIAT RIVER

Brief	20B19	1600	3/26	30	11.7	4.6	2.5*
Entiat Meadows +	20A33a	4800	3/15	174	64.0	--	--
			3/29	174	64.9	36.9	--
Entiat River Tr. +	20A34a	3150	3/15	97	33.0	--	--
			3/29	100	38.0	17.0	--
Fox Camp +	20A36a	6510	3/15	182	71.4	--	--
			3/29	182	67.9	42.5	--
Pope Ridge	20B20	4300	3/11	74	25.2	17.4	--
			3/30	73	27.8	16.3	--
Pugh Ridge +	20A32a	6400	3/15	121	44.5	--	--
			3/29	130	48.5	32.5	--
Shady Pass	20A37	5000	3/15	102	37.4	20.0	--
			3/31	103	38.5	21.0	--
Snow Brushy +	20A35a	3850	3/15	147	54.1	--	--
			3/29	157	58.6	27.2	--
Tommy Creek +	20B21a	5300	3/15	91	33.5	--	--
			3/29	92	34.3	20.9	--

+ Snow water equivalent estimated from aerial stadia observations

* Adjusted 1953-67 average

Not located directly on this drainage

APPENDIX 5

SNOW

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average††
<u>WENATCHEE RIVER</u>							
Berne-Mill Creek	21B23	2925	3/29	111	45.6	28.8	27.5*
Berne-Mill Creek New	21B41SP	3240	3/29	92	40.9	29.8	--
Blewett Pass No. 2	20B2	4270	3/26	61	24.8	19.0	16.1
Chiwaukum G. S.	20B16	1810	3/29	53	19.4	10.4	9.6*
#Fish Lake	21B4	3371	3/29	133	56.8	31.0	35.4
Lake Wenatchee	20B5	1970	3/29	56	24.0	9.9	11.1*
Leavenworth R. S.	20B17	1127	3/15	16	6.2	--	--
			3/29	7	3.2	0.3	--
#Lyman Lake	20A23A	5900	3/22	203	82.4	46.6	58.5
Merritt	20B18	2140	3/29	60	24.6	14.0	14.2*
Stevens Pass	21B1	4070	3/15	176	67.9	48.3	49.7
			3/29	182	79.1	37.0	54.1
Stevens Pass S. Shed	21B45	3700	3/15	136	50.7	33.7	--
			3/29	130	57.2	30.7	--

SQUILCHUCK CREEK

Beehive Springs	20B3	4400	3/30	27	9.8	11.4	7.7*
Scout-A-Vista	20B4	3400	3/30	33	11.3	10.2	6.4*

STEMILT CREEK

Jump-Off	20B8	4450	3/29	33	11.2	12.0	7.3*
Stemilt Slide	20B6	5000	3/29	55	19.1	14.9	13.3*
Upper Wheeler	20B7	4400	3/29	33	13.6	12.4	8.3*

COLOCKUM CREEK

Colockum Creek Upper	20B22	5300	3/30	46	18.5	18.7	--
Colockum Creek Lower	20B23	4300	3/30	38	13.0	13.8	--

YAKIMA RIVER

#Ahtanum R. S.	21C11	3100	3/26	29	10.3	8.2	4.9*
Big Boulder Creek	21B9	3200	3/29	82	34.7	21.4	18.7
#Blewett Pass No. 2	20B2	4270	3/26	61	24.8	19.0	16.1
Bumping Lake	21C8	3450	3/15	73	29.0	25.8	16.9*
			3/30	70	29.5	22.2	16.8
Bumping Lake New	21C36	3400	3/15	84	31.5	28.5	--
			3/30	83	34.0	27.4	--
#Cayuse Pass	21C6	5300	4/1	302	135.3	73.1	91.2

Not located directly on this drainage

* Adjusted 1953-67 average

APPENDIX 6

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average ++

YAKIMA RIVER (Cont.)

Colockum Pass	20B9	5370	3/29	66	21.8	19.7	18.6*
Cooke Creek	20B10	4123	3/29	29	9.7	7.6	5.5*
#Corral Pass	21C13	6000	4/1	148	59.8	35.2	41.7*
Fish Lake	21B4	3371	3/29	133	56.8	31.0	35.4
Green Lake	21C10	6000	Not Measured			38.2	33.2*
Grouse Camp	20B11	5385	3/30	59	20.4	18.9	18.2*
High Creek	20B12	2930	3/30	28	10.8	0.0	0.9*
Joe Lake	21B46a	4624	Marker down				
Lake Cle Elum	21B14M	2200	3/12	27	7.8	10.8	11.0*
			3/31	23	8.8	1.2	5.7
Lemah Creek +	21B47a	3327	3/16	159	63.6	--	--
			Late Report			40.9	--
Manashtash	20C1	3935	3/31	19	6.5	5.2	1.8*
Morse Lake	21C17	5400	3/30	236	94.4	47.3	62.0*
Nanum	21B39	2340	3/30	41	14.5	12.4	8.0*
#Olallie Meadows	21B2	3625	3/25	184	81.0	39.1	51.3
#Satus Pass	20D1	4030	3/31	51	19.9	9.9	--
#Stampede Pass	21B10	3000	3/15	167	65.1	34.0	45.2
			3/31	174	67.5	34.6	48.8
Trail Creek	20B14	3360	3/29	0	0.0	0.0	--
Tunnel Avenue	21B8	2450	3/15	100	35.2	22.0	25.2*
			3/30	96	38.2	19.3	25.9
Walters Flat	20B15	3360	3/30	30	11.1	6.4	4.9*
Waptus Lake +	21B49a	3024	3/16	153	61.2	--	--
			Late Report			40.9	--
White Pass (E. Side)	21C28	4500	3/18	96	37.7	25.4	24.4*
			4/1	97	41.7	25.1	26.6*
White Pass (L. Lake)	21C27	4500	3/18	106	43.6	32.4	31.4*
			3/30	108	42.5	31.5	32.6*
Van Epps Pass	20B26a	5925	3/16	174	69.6	New Marker	
			Late Report				

AHTANUM CREEK

Ahtanum R. S.	21C11	3100	3/26	29	10.3	8.2	4.9*
#Green Lake	21C10	6000	Not Measured			38.2	33.2*

Not located directly on this drainage

+ Snow water equivalent estimated from aerial stadia observation

* Adjusted 1953-67 average

APPENDIX 7

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average $\frac{++}{+}$

LOWER COLUMBIA DRAINAGEASOTIN CREEK

Spruce Springs	17C4	5700	3/22	73	22.7	26.9	--
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MILL CREEK

Homestead	17C1	4030	3/31	25	9.9	3.1	7.9*
Martin Springs	17C2	4400	3/31	42	16.6	13.2	14.5*
Tollgate	18D3M	5070	3/29	73	30.7	29.7	25.9

KLICKITAT RIVER

Satus Pass	20D1	4030	3/31	51	19.9	9.9	--
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WHITE SALMON RIVER

Cultus Creek	21C12	4000	3/9	163	64.9	35.4	38.9*
			4/1	177	79.3	38.5	49.7
#Surprise Lakes	21C13A	4250	3/9	170	69.3	39.8	42.0
			4/1	192	84.2	41.9	54.8

WIND RIVER

#Old Man Pass	21D19	3100	3/5	97	32.9	9.6	15.8*
			4/1	102	44.4	6.2	20.7*

LEWIS RIVER

Blue Lake +	21C22a	4800	4/1	300	130.0	78.7	84.2*
Bob's Trail	21C21	2200	4/1	76	33.0	0.0	13.8*
Calamity Ridge +	22D1a	2500	4/1	48	20.6	0.0	--
Council Pass +	21C18a	4200	4/1	162	71.3	36.5	42.6*
#Cultus Creek	21C12	4000	3/9	163	64.9	35.4	38.9*
			4/1	177	79.3	38.5	49.7
Divide Meadow +	21C29a	5600	4/1	204	89.8	52.2	60.0*
Grand Meadow	21C25	3500	4/1	106	46.0	18.1	29.0*
Lone Pine Shelter	21C26	3800	3/5	162	61.1	26.9	31.4*
			4/3	175	77.7	26.6	--
Marble Mountain+	22C5a	3200	4/1	160	73.6	7.7	--
#Mosquito Meadows	21C19	4100	3/5	168	62.9	27.7	34.4*
			4/3	177	80.3	29.2	47.4*

Not located directly on this drainage

+ Snow water equivalent estimated from aerial stadia observation

* Adjusted 1953-67 average

APPENDIX 8

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average $\dagger\dagger$

LEWIS RIVER (Cont.)

New Muddy River	22C6	1400	4/2	50	20.7	0.0	--
Old Man Pass	21D19	3100	3/5	97	32.9	9.6	15.8*
			4/1	102	44.4	6.2	20.7*
Plains of Abraham +	22C1a	4400	4/1	242	108.9	82.8	70.2*
Smith Creek Road	22C4	2100	4/2	87	41.9	2.6	17.2*
Spencer Meadow +	21C20a	3400	4/1	116	51.0	2.7	25.6*
Surprise Lakes	21C13A	4250	3/9	170	69.3	39.8	42.0
			4/1	192	84.2	41.9	54.8
Table Mountain +	21C24a	4200	4/1	184	81.0	43.1	49.2*
Timbered Peak +	21D18a	3000	4/1	85	36.6	0.0	23.7*

COWLITZ RIVER

Cayuse Pass	21C6	5300	4/1	302	135.3	73.1	91.2
Mosquito Meadows	21C19	4100	3/5	168	62.9	27.7	34.4*
			4/3	177	80.3	29.2	47.4*
Ohanapecosh	21C32	2200	3/30	78	36.0	2.4	16.4*
Packwood Lake	21C31	2870	4/1	66	29.1	1.2	13.5*
Pigtail Peak	21C33	5900	3/18	204	93.0	50.3	--
			3/30	216	88.0	51.8	72.9*
#Plains of Abraham +	22C1a	4400	4/1	242	108.9	82.8	70.2*
Potato Hill	21C14	4500	3/5	125	44.9	27.6	25.7
			4/1	130	55.1	29.3	33.0*
#White Pass (E. Side)	21C28	4500	3/18	96	37.7	25.4	24.4*
			4/1	97	41.7	25.1	26.6*
#White Pass (L. Lake)	21C27	4500	3/18	106	43.6	32.4	31.4*
			3/30	108	42.5	31.5	32.6*
Willame Creek	21C30	3250	4/1	116	54.6	14.4	35.0*

PUGET SOUND DRAINAGENISQUALLY RIVER

Ghost Forest	21C4	4550	3/29	175	73.0	36.0	50.1
Longmire	21C3	2760	3/29	66	27.3	0.0	10.6
New Paradise Park	21C35	5500	3/29	250	106.6	66.2	--
Stem Glade	21C1	5050	3/29	249	104.7	61.1	74.4

Not located directly on this drainage

+ Snow water equivalent estimated from aerial stadia observation

* Adjusted 1953-67 average

APPENDIX 9

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average††

WHITE RIVER

#Cayuse Pass	21C6	5300	4/1	302	135.3	73.1	91.2
Corral Pass	21C13	6000	4/1	148	59.8	35.2	41.7*
#Morse Lake	21C17	5400	3/30	236	94.4	47.3	62.0*

GREEN RIVER

Airstrip	21B24	1800	3/5	25	5.0	0.0	--
			4/1	8	3.6	0.0	--
Charley Creek	21B25	1200	3/5	20	4.0	0.0	--
			4/1	0	0.0	0.0	--
Cougar Mountain SP	21B42SP	3200	3/25	86	37.0	28.0	--
Grass Mountain # 2	21B27	2900	3/5	100	34.7	15.1	18.1*
			4/1	108	45.2	16.1	26.1*
Grass Mountain # 3	21B28	2100	3/5	44	11.5	0.0	--
			4/1	33	13.5	0.0	--
Lester Creek	21B29	3100	3/5	101	29.4	18.0	20.7*
			4/1	101	40.0	19.5	28.7*
Lynn Lake	21B50	4000	3/5	93	33.8	11.1	--
			4/1	96	44.7	10.6	--
Sawmill Ridge	21B29	4700	3/5	142	49.0	24.6	36.5*
			4/1	146	60.8	28.6	46.0*
Snowshoe Butte SP	21B43SP	5000	3/25	197	77.0	45.0	--
Stampede Pass	21B10	3000	3/15	167	65.1	34.0	45.2
			3/31	174	67.5	34.6	48.8
Twin Camp	21B30	4100	3/5	92	30.2	21.3	24.9*
			4/1	95	37.2	23.5	31.0*

CEDAR RIVER

City Cabin	21B3	2390	3/28	93	36.9	8.5	18.3*
Mt. Gardner	21B21	3300	3/28	94	40.9	4.0	19.8*
Mt. Lindsay	21B16	2500	3/30	92	36.6	8.2	17.7*
Mt. Washington	21B15	3000	3/30	47	18.8	0.0	8.9*
Rex River	21B17	2400	3/28	45	15.7	0.0	19.8*
S. F. Cedar	21B6	3000	3/28	102	41.0	9.3	24.8
Tinkham Creek	21B20	3400	3/28	123	46.7	22.8	23.2*

SNOQUALMIE RIVER

Alpine Meadow	21B48	3500	3/31	182	78.1	33.8	--
#Lake Elizabeth	21B19	2900	3/29	178	82.5	38.6	46.9*
Olallie Meadows	21B2	3625	3/25	184	81.0	39.1	51.3
S. F. Tolt	21B18	1900	3/31	9	3.7	0.0	--

Not located directly on this drainage

* Adjusted 1953-67 average

APPENDIX 10

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average++

SKYKOMISH RIVER

Lake Elizabeth	21B19	2900	3/29	178	82.5	38.6	46.9*
#Stevens Pass	21B1	4070	3/15	176	67.9	48.3	49.7
			3/29	182	79.1	37.0	54.1
#Stevens Pass S. Shed	21B45	3700	3/15	136	50.7	33.7	--
			3/29	130	57.2	30.7	--

SKAGIT RIVER

Beaver Creek Trail	21A4	2200	3/5	68	23.4	8.3	14.0*
			4/1	74	31.1	3.1	13.6
Beaver Pass	21A1	3680	4/1	132	50.6	26.6	35.6
Devils Park	20A4	5900	4/1	150	57.2	34.4	46.0
Freezeout Cr. Trail	20A1	3500	3/5	59	19.8	10.0	12.6
			4/3	64	23.8	10.7	13.4
Freezeout Meadows	20A2	5000	4/3	143	58.0	23.4	32.6
#Harts Pass	20A5A	6500	4/1	157	61.1	36.6	46.6
Klesilkwa	Canada	3700	4/3	65	25.4	9.5	14.5**
Lake Hozomeen	21A2	2600	3/5	52	17.5	6.9	9.0*
			4/3	55	20.4	6.5	10.4
#Lyman Lake +	20A23A	5900	3/22	203	82.4	46.6	58.5
Meadow Cabins	20A8	1900	4/1	30	11.4	0.5	7.5
New Tashme	Canada	2500	4/1	44	19.4	3.6	10.4**
Quartette Lake	Canada	4000	3/26	57	18.9	12.8	14.9**
#Rainy Pass	20A9	4780	4/1	144	57.6	31.0	41.2
Thunder Basin	20A7	4200	4/1	90	32.0	19.0	25.8

BAKER RIVER

Baker Pass +	21A27a	4900	Not Measured			62.9	--
			Not Measured			62.9	--
Dock Butte +	21A11A	3800	Not Measured			42.2	--
			4/4	235	100.8	47.0	81.0*
Easy Pass +	21A7A	5200	Not Measured			58.1	--
			4/4	262	113.3	69.3	96.7*
Jasper Pass +	21A6A	5400	Not Measured			73.9	--
			4/4	289	126.0	63.6	103.6*
Komo Kulshan	21A17	800	4/4	41	16.8	0.0	--
Marten Lake	21A9A	3600	Not Measured			51.9	--
			Late Report			55.8	88.2*
Mount Blum +	21A18a	5800	Not Measured			51.5	--
			Late Report			51.0	--

Not located directly on this drainage

* Adjusted 1953-67 average

** Average for years of record

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	NO.	Elevation				Last Year	Average++

BAKER RIVER (Cont.)

#Panorama New	21A26	4300	3/14	218	87.2	55.3	--
			3/28	239	96.6	55.8	--
Rocky Creek	21A12A	2100	Not Measured			5.3	32.4*
			4/3	136	57.9	10.3	30.5*
Schreibers Meadow	21A10A	3400	Not Measured			48.4	63.8*
			Late Report			44.8	73.3*
S. F. Thunder Cr.	21A14A	2200	Not Measured			0.0	--
			4/3	44	17.6	0.0	5.3*
Sulphur Creek	21A13	1600	4/3	75	32.6	0.0	13.7*
Three Mile Cr.	21A8A	4500	4/3	19	6.3	0.0	--
Watson Lakes	21A8A	4500	Not Measured			39.6	69.0*
			4/3	246	103.2	46.0	78.2*

NOOKSACK RIVER

Bald Mountain +	21A19a	4400	3/31	177	70.8	45.0	--
Canyon +	21A20a	5100	3/31	215	86.0	50.4	--
Glacier Creek	21A23	3700	4/1	100	40.5	16.8	--
Panorama New	21A26	4300	3/14	218	87.2	55.3	--
			3/28	239	96.6	55.8	--
Twin Lakes +	21A21a	5200	3/31	235	94.0	68.0	--

OLYMPIC PENINSULADUNGENESS RIVER

Deer Park	23B4	5200	3/31	95	34.9	28.1	26.4*
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MORSE CREEK

Cox Valley	23B14	4500	3/31	181	67.2	30.6	--
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ELWHA RIVER

Hurricane	23B3	4500	3/28	121	39.8	15.0	29.3
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SKOKOMISH RIVER

Black & White	23B7	4200	3/31	184	73.0	24.8	47.9
Black & White Lakes	23B6	4700	3/31	221	98.8	50.4	67.3
Four Streams	23B10	3000	3/31	161	67.8	12.7	--
Home Sweet Home	23B5	5200	3/31	290	119.3	58.2	81.9
Sundown Pass	23B8	3900	3/31	253	104.0	48.7	66.5*

* Adjusted 1953-67 average

+ Snow water equivalent estimated from aerial stadia observation

Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Department of Lands, Forests and Water Resources,
Water Resources Service, British Columbia

States:

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal:

Department of the Army
Corps of Engineers
U. S. Department of Agriculture
Forest Service
U. S. Department of Commerce
Weather Bureau
U. S. Department of the Interior
Bonneville Power Administration
Bureau of Reclamation
Geological Survey
National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Tacoma
City of Seattle

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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